

Application No. 09/944,466
Amendment dated September 9, 2004

PATENT

Amendments to the Claims:

This Listing of Claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-4 (canceled).

Claim 5 (currently amended): A disc recording method ~~and an apparatus~~ using the method comprising: the steps of:

starting to count clocks reproduced from each of basic recording areas, ~~as a basic recording unit~~, of the disc prescribed according to disc standards, the respective basic recording areas reproducing a same number of first clocks, or to count second clocks obtained by multiplying or dividing a frequency of the first clocks, at a starting point of the basic recording area;

adding the obtained count to an address allocated to the relevant basic recording area;

detecting a particular basic recording area of the disc and a particular position in the particular basic recording area based on a result of the addition of the count and the address; and

controlling, based on a result of the detection, a position in the basic recording area where recording starts, in units of a sub-area obtained by sub-dividing the basic recording area.

Claim 6 (currently amended): A disc recording method ~~and an apparatus~~ using the method according to claim 5 further comprising: the steps of:

storing the count in the basic recording area recorded so far and the address of the basic recording area when the recording becomes stopped due to some external cause in the basic recording area during recording; and

locating the position where the recording stopped when the recording becomes re-openable, based on the stored address and count of the basic recording area, and continuing the recording on the disc at the located position.

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Claims 7 (currently amended): A disc recording method ~~and an apparatus~~
~~using the method~~ according to claim 6, wherein:

wobble signals are used as clocks reproduced by a same number from the
respective basic recording areas on the disc.

Claim 8 (currently amended): A disc recording method ~~and an apparatus~~
~~using the method~~ according to claim 6, wherein:

the disc-type recording medium under recording employs sequential recording
basically.

Claim 9 (currently amended): A disc recording method ~~and an apparatus~~
~~using the method~~ according to claim 6, further comprising: ~~the steps of:~~

~~in order to~~ continue the recording on the disc at a position located based on the
stored address and count of the basic recording area,

beforehand holding proper data in a data buffer corresponding to the basic
recording area;

reading data corresponding to the located position from the data buffer; and
continuing to record the data on the disc.

Claim 10 (currently amended): A disc recording method ~~and an apparatus~~
~~using the method~~ according to claim 6, wherein each second basic recording area is in a range
correctable by an ECC (Error Correction Code) block added to data.

Claim 11 (currently amended): A disc recording method ~~and an apparatus~~
~~using the method~~ according to claim 6, further comprising: ~~the steps of:~~

determining a period of clocks used for control of a record starting position in
the basic recording area that a read error in reproduction produced due to a deviation between
a recording stopping position and a record re-opening position which in turn is due to
accuracy of clocks used for control of the record starting position in the basic recording area
is in a range of error correctability prescribed according to disc standards; and

eliminating the read error with aid of the error correcting ability.

Claim 12 (new): A disc recording apparatus comprising:

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a reference clock counter connected to receive and count clock signals reproduced from a plurality of basic recording areas of a disc beginning at a starting point of such basic recording area, the respective basic recording areas reproducing a same number of first clock signals;

an address detector connected to detect an address allocated to the relevant basic recording area and providing it to the reference clock counter for being added to the obtained count;

a write gate generator coupled to receive signals from the reference clock generator and the address detector for detecting a particular basic recording area of the disc and a particular position in a desired basic recording area; and

an encoder/driver coupled to receive user data to be written to the disk and coupled to receive control information from the write gate generator, the address detector and the reference clock counter to control writing to a position in the basic recording area where recording starts, in units of a sub-area obtained by sub-dividing the basic recording area.

Claim 13 (new): A disc recording apparatus according to claim 12 wherein if recording is stopped due to an external cause, a count and the address of the basic recording area are stored in the basic recording area recorded up to that time when the recording is stopped, and upon restarting recording, that information is used to continue the recording on the disc at the located position.

Claim 14 (new): A disc recording apparatus according to claim 13 further comprising a data buffer for storing data corresponding to the basic recording area to enabling continuing recording on the disc at a position based on a stored address and stored count.

Claim 15 (new): A disc recording apparatus according to claim 13 further comprising apparatus for determining a period of clock signals used for control of a record starting position in the basic recording area that a read error produced due to a deviation between a recording stopping position and a record re-opening position, which period in turn is due to accuracy of clocks used for control of the record starting position in a range of error correctability, and eliminating the read error with aid of the error correcting ability.